

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1- 4 (canceled)

5. (currently amended) An apparatus for processing a sample, comprising:
a processing chamber provided with a platform on which the sample is placed, the processing chamber being provided with a measurement window formed on a wall ~~surface~~ of the processing chamber;

exhaustion means for exhausting inside of the processing chamber via an exhaust port of the processing chamber by a turbo-molecular pump through an exhaust passage ~~equipped with a butterfly valve~~ coupled to the exhaust port;

gas injector for injecting gas into the processing chamber;

a plasma generator for generating plasma in the processing chamber after the gas has been injected into the processing chamber by the use of the gas injector;
and

a particle detector having a laser scanner and a detector which are installed outside of the processing chamber, the laser scanner introducing a laser from outside of the processing chamber to inside of the processing chamber through the measurement window having a reflection prevention film coated thereon so as to scan a laser beam in a plane inside of the processing chamber which extends in a direction orthogonal to a direction of exhaust flow within the processing chamber to the exhaust port ~~and outside of a region where the plasma is generated~~, and the

detector detecting light which is scattered from ~~a particle crossing~~ particles passing through the plane while the laser beam scans in the plane and which passes through the measurement window having the reflection prevention film coated thereon;

wherein the measurement window is installed on the wall of the processing chamber proximate to the exhaust port and outside of a plasma generation region so as to prevent the measurement window from deterioration in detection sensitivity of the light scattered from the particles inside of the processing chamber.

Claims 6 and 7 (canceled)

8. (currently amended) A plasma processing apparatus comprising:

a plasma processing unit including a chamber, a plate on which a sample is placed, a plasma generator, an exhaustion pump for exhausting inside of the chamber through an exhaust port of the chamber, and a measurement window formed on a wall of the chamber, the processing unit being used for processing the sample placed on the plate with plasma generated by the plasma generator inside of the chamber;

a particle detecting unit which scans a laser beam in a plane which extends in a direction which is orthogonal to an exhaust flow direction inside of the chamber ~~and outside of a region where the plasma is generated to the exhaust port,~~ and which detects light scattered from a particle crossing the plane while the laser beam scans the plane; and

a controlling unit for receiving a signal output from the processing unit and a detection signal from the particle detecting unit to control the processing unit and to monitor a state of contaminants inside of the chamber;

wherein the particle detecting unit introduces the laser beam from outside of the processing chamber to inside of the processing chamber through the measurement window ~~having a reflection prevention film coated thereon, and monitors the light scattered from the particle crossing the plane of the processing chamber and passing outside of the processing chamber through the measurement window having the reflection prevention film coated thereon~~ which is installed on the wall of the chamber proximate to the exhaust port and outside of a region where the plasma is generated by the plasma generator to prevent the measurement window from deterioration in detection sensitivity of the light scattered from the particles inside of the processing chamber.

9. (previously presented) The plasma processing apparatus according to claim 8, wherein the controlling unit compares the output signal from the processing unit with the detection signal by the particle detecting unit to identify a contaminant source in the processing apparatus.

Claim 10 (canceled)

11. (previously presented) The apparatus according to claim 5, wherein the exhaustion means enables evacuation of the processing chamber, and the plasma generator generates the plasma after the processing chamber has been evacuated.

12. (previously presented) The apparatus according to claim 5, wherein the laser scanner and the detector are arranged at a substantially same position outside of the processing chamber with respect to the measurement window.

13. (previously presented) The plasma processing apparatus according to claim 8, wherein the particle detecting unit includes a laser scanner which introduce the laser beam and a detector which detects the scattered light and which are arranged at a substantially same position outside of the processing chamber with respect to the measurement window.

14. (previously presented) The apparatus according to claim 5, wherein the reflection prevention film is coated on an outside surface of the measurement window upon which the laser is incident from outside of the processing chamber.

15. (currently amended) The plasma processing apparatus according to claim [[8]] 18, wherein the reflection prevention film is coated on an outside surface of the measurement window upon which the laser is incident from outside of the processing chamber.

16. (new) The apparatus according to claim 5, wherein the plane in which the laser beam is scanned inside of the processing chamber is disposed substantially outside of a region where the plasma is generated inside of the processing chamber.

17. (new) The apparatus according to claim 5, wherein the exhaust passage is equipped with a butterfly valve.

18. (new) The plasma processing apparatus according to claim 8, wherein the measurement window has a reflection prevention film coated thereon.

19. (new) The plasma processing apparatus according to claim 8, wherein the plane in which the laser beam is scanned inside of the chamber is substantially outside of a region where the plasma is generated inside of the chamber.